Technical Disclosure Commons

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TWO-PIECE CONDUCTIVE BRUSHES FOR DRIVERLESS TRANSPORT SYSTEMS

Verena Schwaiger
Bertrandt Ingenieurbüro GmbH

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Technical task:
In the case of automated guided vehicle systems that transport parts in an assembly environment in which sensitive electronic components are also installed, e.g. automobile assembly or engine assembly, it must be ensured that the vehicles are conductive, i.e. no high resistance can form between the electronic components and the floor. This prevents these components from becoming electrostatically charged in relation to the floor and the subsequent discharge leads to damage to the electronics.

Initial situation:
In the state of the art, brushes are used for this purpose. The brushes are mounted on the vehicle in an electrically conductive manner. The brushes are made of an electrically conductive material. The floor itself is also designed to be conductive. However, the disadvantage of the overall system is that both the floor and the brush fibres get dirty relatively quickly and the conductivity is lost. Since the brushes are located below the vehicle and the resistance cannot be measured permanently, there is a risk that the vehicle's conductivity will be lost and the risk of damage to the electronic components will increase.

Solution:
The brush is constructed in two parts: three for vehicles travelling in both directions and five for vehicles travelling omnidirectionally in all directions. The conductive part of the brush is preceded in the direction of travel by an exchangeable, cleaning part of the brush. This now fulfils the task of picking up the dirt from the floor.

Advantages:
The contamination of the floor, which otherwise accumulates in the conductive material and thus reduces its conductive properties, is already absorbed in the leading part of the brush. This keeps the conductive part clean and conductive. At the same time, the floor is also cleaned and its conductive properties are improved.